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ABSTRACT

Overall, federal and state tax codes treat employer investments in human capital more favorably than investment in physical plant and equipment. The most important advantage is that training expenditures can be dispensed immediately, rather than depreciated over time, possibly resulting in a subsidy of 33 percent. In addition, employers who use public institutions to train their workers will rarely have to pay the full cost of these services. Employer-provided training is important for the overall growth of the economy and an important way in which many people acquire more marketable skills. However, there is no strong case for further subsidies to encourage employers to invest more in the work force. The evidence of overall underinvestment in the United States does not imply that there is underinvestment in human capital acquired on the job. Employers can use contracts to capture the benefits of the training for which they pay. However, employer-provided training rarely compensates for poor education--rather, it is concentrated on employees who are well-educated. Many useful mechanisms for subsidizing employer training of the work force are in place. Most public training institutions are already developing programs to train workers for local businesses and to train economically disadvantaged workers. Because employer training is complementary to basic education, the best way to encourage employers to invest more in the work force is to reduce the number of high school dropouts and to improve the quality of basic education. (Author/KC)

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PUBLIC SUBSIDIES AND PRIVATE TRAINING

Roger J. Vaughan

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ABSTRACT

Overall, federal and state tax codes treat employer investments in human capital more favorably than investments in physical plant and equipment. The most important advantage is that training expenditures can be expensed immediately, rather than depreciated over time. Because of the complexity of separating training expenses from labor operating costs, this preference--which could be equivalent to a subsidy of 33 percent--is not subject to the vagaries of tax reform. In addition, employers who use public institutions to train their workers will rarely have to pay the full cost of these services.

Employer-provided training is important for the overall growth of the economy and an important way in which many people acquire more marketable skills. But there is no strong case, from either *a priori* reasoning or empirical evidence, for further subsidies to encourage employers to invest more in their workforces. The evidence of overall underinvestment in the U.S. does not imply that there is underinvestment in human capital acquired on the job. Employers can use implicit and explicit contracts to capture the benefits of the training they pay for. Employer-provided training rarely compensates for poor education--indeed, it is concentrated on those employees who are relatively well-educated. And there are no compelling "social externality" reasons to subsidize on-the-job training.

Many useful mechanisms for subsidizing employer training of their workforces are in place. Most importantly, public training institutions in most states are already developing programs to train the workforces of local businesses and to train economically disadvantaged workers, although they may face state regulatory impediments to working more closely with employers.

Because employer training is complementary to basic education, the best way to encourage employers to invest more in their workforces is to reduce the number of high school dropouts and to improve the quality of basic education.

INTRODUCTION

> I am inclined to think that the corporation that is not in the business of human development may not be in any business. At least, not for long.
>
> William S. Vaughn, Chairman, Eastman Kodak, 1972

Many skills are learned on the job--paid for, at least in part, by employers.[1] Recent estimates placed employers' investments in their workers in 1985 between $66-$210 billion--compared with total public expenditures on all levels of education and training of between $232-$254 billion.[2] In addition, households invested $43 billion on education and training, not all job-related.

About two-thirds of those trained by their employers acquire their skills in-house--on-the-job or through structured programs offering credentials to graduates.[3] About one-third are trained in institutions outside the firm. Some skills are specific to the job, such as learning office procedures or production techniques, while others can be applied much more widely. Most training imparts both specific and general information.

Employer-provided training appears to increase earnings more than any other type of training, and the effect may last for up to 13 years.[4] It also reduces the likelihood of experiencing unemployment and the average duration of unemployment more effectively than other types of training.

The level of investment in training by employers appears to be growing.[5] In part, this is the response to the increasing skills demanded by technologically complex jobs.[6] Rand researchers Lee Lillard and Hong Tan find:

> Rapid technological change in an industry increases the probability of getting managerial training and training from in-house sources such as company programs or OJT, especially for the most educated, but decreases the probability of getting professional, technical, and semi-skilled manual training, or training from external sources such as business, technical, and traditional schools...possibly because skills specific to new technologies are not readily available outside the firm.[7]

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[1] Unfortunately, there are no accurate estimates. Anthony Carnevale reviews different estimates in *Employer Investments in Training*, Part II; Washington, D.C., American Society of Training Institutions, 1984, Part II. In addition, Carnevale made his own estimates based on the Survey of Participation in Adult Education (SPAE). Jacob Mincer estimates the level of investment between $105 and $210 billion--including the employee's contributions of foregone wages--see *Human Capital Investments and the Labor Market Adjustments to Technological Change*, paper prepared for the Institute on Education and the Economy, Conference on Employer-Sponsored Training, Alexandria, VA, December 1-2, 1988.

[2] Office of Technology Assessment, *Technology and the American Economic Transition*, U.S. Congress, May 1988, p.129ff.

[3] Carnevale, Op. Cit., p. 37ff.

[4] Lee A. Lillard and Hong Tan, *Private Sector Training: Who Gets it and What Are Its Effects*, Santa Monica, CA, The Rand Corporation, Report R-3331, March 1986; and Stephen L. Mangum, "Post-School Occupational Training and the Private Sector," Working Paper WPS 84-39, Ohio State University, May 1984.

[5] Unfortunately, SPAE survey data techniques have changed making it difficult to measure trends with any confidence, see Carnevale, Op.Cit.

[6] Office of Technology Assessment, Op. Cit., and Lillard and Tan, Op. Cit.

[7] Lillard and Tan, Op. Cit., p. vii.

Increased training also reflects workforce shifts from sectors in which employer-provided training is less common into those sectors where it is relatively more common.[8] As a result, education and training are becoming more important in federal and state development policy. At the same time, a growing number of new jobs are being generated in small, new businesses which typically provide less in-house training than do larger companies--relying, instead, on hiring away from larger firms or on external training programs.[9]

What employer-training strategy has the U.S. adopted? Are there better ways of reaching our national economic objectives? This paper explores three questions: 1) Do federal and state taxes and regulations discourage private employers from investing efficiently or enough in their workforces? 2) What are the economic and social arguments for public support of employer-provided training? 3) If public subsidies were to be offered for workforce investments by employers, what is the best way of offering them?

HOW DO WE TREAT EMPLOYER-PROVIDED TRAINING?

A man at work in his trade is the equal of the most learned doctor.

Hebrew Proverb

Overall, federal and state tax policies treat employers' investments in human capital more favorably than comparable investments in plant and equipment. First, and most important, much of the costs of training investments can be expensed (written off when they are incurred), while investments in plant and equipment must be depreciated (written off over time).[10] Second, for those employer-trained workers who are enrolled in public education institutions in formal programs, part of the cost is borne by the taxpayers at large.

When an employer trains an employee the major costs are: (1) the direct costs of paying the trainer (perhaps a contract with an proprietary or public training institution or the costs of creating an in-house program); (2) the loss of output while the employee is training rather than working ; and 3) any time and effort invested by employees for which they receive no compensation (or training rather than enjoying leisure time). Most expenditures in the first two categories can be expensed in the year in which they are made, even though the increase in employee productivity will yield benefits many years into the future. The costs of creating the in-house training facility must be depreciated in the same way as all plant expenditures.

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[8] Carnevale, Op. Cit., p. 7, estimates the following trainee concentration indices for sectors in 1981 (defined as each sector's share of the nation's trainees divided by the sector's share of total employment):

Public Administration	2.3
Mining	2.0
Finance, Insurance, Real Estate	1.9
Transportation and Pub. Util	1.2
Services	1.0
Manufacturing	0.9
Trade	0.5
Construction	0.4
Agriculture	0.2

[9] There are several different estimates--depending on the data base used: David Birch, *The American Job Machine*, New York, Basic Books, 1987, for estimates based on incorporations; Mark Popovich and Terry Buss, *New Businesses and Job Generation in Iowa*, Washington, D.C., Council of State Policy and Planning Agencies, 1987, give a more complete picture of job generation, based on surveys of all new businesses.

[10] Depreciation is not a mechanism that allows an expenditure to be deferred, but a way of offsetting an expenditure that has been incurred against income when computing taxes due.

The last category of costs--those incurred by the employee--are not allowed as expenses. In fact, the personal income tax code discourages training investments by individuals not directly related to their present job (see following section).

Subsidy 1: Employers Can Expense Investments in Employee-Training

The value of "expensing" employer-provided training investments is large and increases with the durability of the training. It is also inevitable. However, many of the costs consist of nothing more than paying wages while employees learn the job, and requiring employers to separate training expenses would create a bookkeeping nightmare.

But treating training as an operating expense is valuable. If an investment in training of $1000 is expensed, the employer's taxable income is reduced by $1000 when the expenditure is made. Investments in plant or machinery cannot be expensed. They must be depreciated over time, which is less valuable. If a piece of equipment, for example, is depreciated over five years, taxable income is reduced by about $200 each year for the next five years. The present value of these depreciation allowances is only $800,[11] a 20 percent reduction in the value of the deduction relative to the training investment. If the investment were depreciated over ten years (reducing taxable income by $100 each year for ten years), the value today of those allowances will be only $667, a 33 percent reduction.[12]

Thus, training investments are subsidized by 20 percent relative to short-term investments in equipment, and 33 percent relative to longer-term investments. There are, of course, many anomalies in the depreciation of capital that raise or lower the effective tax rate.[13] Employer training should probably be treated as a longer term investment--increases in earnings have been found over a decade after training is completed.[14] The total value of this tax subsidy is between $13.2 billion and $58.3 billion annually--between four and sixteen times the direct expenditures on training made under the Job Training Partnership Act.[15]

Subsidy 2: Employer Training in Public Institutions is Often Subsidized

One-third of employer-trained workers are enrolled in external training institutions--most of these in public colleges, Vocational-Technical institutions, and schools. Employers frequently pay these institutions much less than the full cost of the training.

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[11] Assuming a discount rate of 8 percent. Higher rates would yield a higher value on expensing because future deductions would be worth less today.

[12] Effective tax rates vary widely among industries, depending on the relationship between the true rate of depreciation of its capital and the rate allowed for tax purposes.

[13] For example, assets whose real life extends beyond their depreciated life may enjoy a capital gain that the owner can realize by selling the asset or continuing it in use. If the asset is sold, capital gains tax must be paid on the total financial gain, even if much of the gain is attributable to inflation.

[14] Lillard and Tan, Op. Cit. The exact level of subsidy depends on the extent to which the Accelerated Cost Recovery (ACRS) depreciation provisions subsidize or penalize the equipment. Under ACRS, physical plant investments (except for real estate) are grouped into four classes. The implicit subsidy depends upon the relationship between depreciation schedules and true depreciation rates.

[15] Neutral treatment of depreciation would allow companies to deduct, in the first year, the present value of future depreciation provisions--$800 for each $1000 invested in assets that depreciated over five years, for example, and $667 for ten-year assets. See Alan J. Auerbach, "Tax Integration and the 'New View' of the Corporate Income Tax: A 1980s Perspective," *Proceedings of the Seventy Fourth Annual Conference on Taxation*, Columbus, Ohio, National Tax Assocation, 1982.

There are no estimates of this public subsidy because there are no nationwide data on company-specific training programs offered by public institutions. In some communities, Vo-Tech institutions charge local employers full operating costs (instructional costs, materials, heat, light, etc.) for courses that are not part of their regular curriculum. They rarely charge overhead costs, however. In other communities, special courses are offered for low fees as part of local effort to attract and retain industry.

CONCLUSION

Overall, federal and state tax codes treat employer investments in human capital more favorably than investments in physical plant and equipment. The most important advantage is that training expenses can be expensed immediately, rather than depreciated over time. Because of the complexity of separating training expenses from labor operating costs, this preference is not subject to the vagaries of tax reform.

DO EMPLOYERS UNDERINVEST IN TRAINING?

By nature men are nearly alike; by practice, they get to be wide apart.

Confucius, 4th Century BC

Economic development is promoted when we invest in assets that yield the highest total rates of return. Investors can choose among many different types of investments--from short-term liquid investments in the shares of established companies to long-term venture placements in new businesses, from investments in next year's harvest, to investments in the next decade's workforce. Investors choose among competing opportunities based on their expected relative rates of return. For human capital investments, the employer weighs the difference between the added productivity and the training costs plus any net increase in wages paid to retain employees (workers will be prepared to accept lower wages while they are receiving training, but may require higher wages to retain them afterward).

Employers are likely to underinvest in training: (1) if costs of the investment are above their true "costs" (as might occur if the cost of borrowing were artificially increased by taxes or regulation), or (2) if the returns are below the true "returns" (as might occur if employees left when they had completed their training). Arguments to support public subsidies, therefore, rest on finding some public benefit associated with employer-provided training that the employee and the employer are unable to capture or systematically overlook.

If employers do underinvest in training, public subsidies for training may promote growth. The six arguments advanced most frequently about why public and private costs of, and rates of return to, training by employers may diverge are:

1) Employers and employees in the United States underinvest in all types of assets because the savings rate is low, because the federal deficit has absorbed a large share of private savings, or because distributed corporate income is taxed twice.

2) Because individuals invest too little in education and training, companies should be encouraged to fill the gap.

3) Employers underinvest in training their workforce because workers can easily leave to work elsewhere before the employer has recaptured the benefits of the training.

4) Subsidies are needed to encourage employers to hire and train economically disadvantaged people.

5) Training provides societal benefits broader than those reflected in increased productivity.

6) Employers may be able to provide training services more effectively or efficiently that public education and training programs.

The most convincing evidence for underinvestment would be rates of return to training far higher than for other types of investment. Unfortunately, empirical estimates range from 4 percent--indicating substantial overinvestment--to 25 percent--which would indicate underinvestment.[16] Simply because employer-provided training is important--and its importance may be growing--does not distort the relationship between public and private returns and present an argument for a subsidy, although its importance may magnify the importance of distortions that have arisen for other reasons.

Argument 1: We Save and Invest Too Little

Debate among economists in the past decade has centered on the need to encourage saving and investment. It has been predicated on the observation that the U.S. has a much lower rate of saving than other developed countries and, as a consequence, invests too little.[17] In 1982, for example, the OECD reported that gross nonresidential fixed capital formation in the U.S. absorbed only 11.3 percent of gross domestic product, half the 23.9 percent in Japan.[18] Federal tax reductions in 1981 and reforms in 1986 were justified by the need to stimulate savings and promote investments.[19]

Critics of tax policy have argued that the tax code subsidizes consumption at the expense of investment by allowing deductibility of consumer debt interest payments (phased-out beginning since 1986), and subsidizes investments in real estate relative to "productive assets" (although deductibility of mortgage interest payments was limited in 1986).[20] In addition, the double taxation of savings income and corporate dividends discourages savings and investment.[21] In the last decade, however, both personal and corporate income tax rates have been reduced. Many aspects of the tax code that most deterred capital accumulation have thus been eliminated or ameliorated.

Much of the concern over the impact of taxes on capital accumulation was the result of the insidious influence of inflation on effective tax rates. By reducing the real value of allowances and creating "paper

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[16] Mincer, Op. Cit., Table 13.

[17] The literature is vast. Some of the more influential books from both ends of the political spectrum include: The Business Week Team, *The Reindustrialization of America*, New York, McGraw Hill, 1981; Lester Thurow, *The Zero Sum Society*, New York, Basic Books, 1980; Ira Magaziner and Robert Reich, *Minding America's Business*, New York, Harcourt, Brace Jovanovich,1982; Barry Bluestone and Bennet Harrison, *The Deindustrialization of America*, New York, Basic Books, 1982; Chalmers Johnson, ed., *The Industrial Policy Debate*, San Francisco, Institute of Contemporary Studies, 1984; and Richard B. McKenzie, *The American Job Machine*, New York, Universe Books, 1988.

[18] Michael Barker and Michael Keischnick, "Taxes and Growth," *Tax Notes*, Vol. 23, No. 6, May 7, 1984, pp. 629-634.

[19] See Committee on Ways and Means, *Tax Incentive Act of 1981*, U.S. Congress, July 24, 1981, and for a description of the passage of the 1986 Tax Reform Act; see also Jeffrey H. Birnbaum and Alan S. Murray, *Showdown at Gucci Gulch*, New York, Vintage, April 1988.

[20] The classification of real estate as unproductive raises difficult questions. Houses are among the most enduring of consumer durables and yield a stream of services that are extremely important to families. Since the end of all production is consumption, housing is arguably as productive as any other investments we make.

[21] Michael Boskin, "Taxation, Saving, and the Rate of Interest," *Journal of Political Economy*, Vol. 86, April 1978. Some analysts argue that the tax code encourages corporation to adopt a short-term perspective and to overlook long-term investments in the pursuit of high quarterly earnings in order to avoid take-overs (see, for example, Robert Reich, *The New American Frontier*, New York, Basic Books, 1984). There is, however, only anecdotal evidence offered for this.

gains," inflation greatly increased the real rates of taxation on income from assets.[23] Since 1980, however, the rate of inflation has fallen by more than 60 percent.

As a result, recent studies have questioned the extent to which the U.S. underinvests. By one estimate, over one-half the wealth of the U.S. is held as human capital--higher than in any other country.[24] Yet acquisitions of human capital are rarely included in international comparisons of savings and investments. The relatively high investments in education and training in the U.S.--a large part by households and businesses--lead us to undercount the overall rate of savings and investment relative to countries that invest more heavily in plant and equipment.

If the U.S. does invest too little, it invests too little in all assets--not merely in the type of human capital acquired on the job. The appropriate policy would be to subsidize savings or all types of "productive" investments--not to subsidize the one type of asset that is already subsidized heavily.

Argument 2: Since Individuals Invest Too Little in Educating and Training Themselves, Companies Must Invest More.

Human capital is costly and not always easily acquired. It is expensive in terms of the direct costs incurred and the time the investors--the trainees--must commit; they must be present to make the investment often for long hours over many years. Financing these investments is not easy because they are risky. Will the investors be able to learn the skills they are taught? Will they find a market for those skills? Because we carry our human capital with us, skills offers little security. While machines or buildings can serve as collateral for the loans that finance their acquisition, human capital cannot. Without public intervention, our ability to acquire education or training would depend upon the financial resources of family and friends. The existence of student loans and general public subsidies to post-secondary education attests to the problem people may have in financing education. Further subsidies to employers for training may be less productive than expanding existing student grant and loan programs.

The tax code influences individual investments in training in several conflicting ways. First, the costs of education or training not related to present occupations cannot be deducted from personal income when calculating taxable income. This discourages retraining. While the exclusion avoids subsidizing "nice-to-know" hobbies or perpetual students through the tax code, many of us must learn new occupations or extend our education to escape from unsuitable or unrewarding jobs. This policy discourages individual investments in new training even when such training may be appropriate.

Second, foregone income--wages lost as a result of enrolling in a training program--is expensed immediately (no taxes are due on income not earned!).[25] For most formal post-secondary training, foregone income may be the major part of the costs of the investment.

Third, the income tax reduces the returns to investing in on-the-job training (OJT), but it also reduces disposable incomes which spurs people to invest more. The latter effect appears to predominate. Harvey Rosen found that "a decrease in the marginal [personal income] tax rates of one-third would decrease the

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[23] Martin Feldstein and Joel Slemrod, "Inflation and the Excess Taxation of Capital Gains on Corporate Stock," *National Tax Journal*, Vol. XXI, No. 2, pp. 107-118, 1980.

[24] U.S. Congress, Joint Economic Committee, *Economic Growth and Total Capital Formation*, Washington, D.C., U.S. Government Printing Office, 1976.

[25] The personal income tax subsidies of investments in education are discussed in detail in Stephen P. Dresch, "Human Capital and Economic Growth: Retrospect and Prospect," in Joint Economic Committee, Congress of the United States, *U.S. Economic Growth from 1976 to 1986: Problems and Patterns*, Washington, D.C., May 24, 1977.

incidence of OJT among white males by 2.4 percent."[25] Therefore, the increases in income tax rates during the 1960s and 1970s reduced the accumulation of physical capital but also expanded investments in human capital as people invested to increase their incomes. "Obviously," Rosen concludes, "the two effects do not cancel out--taxation distorts both decisions away from their first best values." But we cannot tell, from the results of current research, whether the level of employer investment in training is above or below its "ideal" level.

Argument 3: People Are Mobile

A man who has a trade may go anywhere.

Spanish Proverb

Employers may underinvest in their workforce if they cannot recapture the benefits of their investment. The "recapture problem" has been examined in detail with respect to basic research, where benefits may profit many firms without the originator receiving payment.[26] Although training may appear similar to research and development, it differs in important ways.

Employers have no guarantee that workers in whom they have invested will not leave after training and convert their new skills into higher wages elsewhere. The Thirteenth Amendment limits the ways in which employers can ensure recapturing investments in their workers.

The more widely marketable are the skills acquired, the easier employees can leave their employer to command higher wages elsewhere. While skills that are entirely "job-specific" do not enhance the employee's attractiveness to others, and the benefits can be fully recaptured by the employer, "occupation-specific" skills can be widely marketed.

As a result, employer training tends to be more job-specific, and externally-provided training tends to be occupation-specific. Overall, the transfer of skills acquired on the job among firms in industries experiencing rapid technological change seems to be small, although these firms are where the greatest concern over the adequacy of training has been voiced. Lillard and Tan found that men and women working in industries experiencing high productivity growth were less likely than average "to report that previous company training and OJT were important at their current or last job," that companies were likely to provide more intensive OJT, and that the use of external training programs was less.[27] Both Mincer and Parsons have found average quit and lay-off rates actually lower in industries where firms invested heavily in employee training.[28] Companies were able to induce workers to stay by offering higher wage ladders and strong, job-specific training.

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[25] Harvey S. Rosen, "Taxation and On-the-Job Training Decisions," *The Review of Economics and Statistics*, Vol. 64, pp. 442-449, August 1982.

[26] For a recent discussion see Martin Neil Baily and Alok K. Chakrabarti, *Innovation and the Productivity Crisis*, Washington, D.C., The Brookings Institution, 1988.

[27] Lillard and Tan, Op. Cit., p. vii.

[28] Jacob Mincer, "Job Training, Wage Growth, and Labor Turnover," unpublished paper, Columbia University, May 1988. Donald Parsons, "Specific Human Capital: An Application to Quit Rates and Layoff Rates," *Journal of Political Economy*, Vol. 80, pp. 1120-1143, November-December, 1972.

Therefore, employers can use implicit or explicit contracts--embodying promotion, higher wages, increased job security[29]--to discourage quitting.[30] These contracts allow for greater flexibility in capturing benefits than patent policy and antitrust law allow to firms investing in research. A successful contract between employer and employee must "embody a delicate balance of encouraging mobility in response to permanent changes in demands and discouraging it for temporary shocks."[31] Employers can reduce the risks of losing recently-trained employees by requiring them to repay the training costs if they leave before a specified period.[32] Employers can also require employees to pay part of the training costs; or employees can take classes after work, thus losing leisure time, not work time.

Employers can share the benefits from acquiring skills through performance bonuses. Employees would be reluctant to move to another employer where their skills, both job- and occupation-specific, may contribute less to output and therefore earn lower bonuses. In Japan, the greater the investment in on-the-job training, the greater the share of earnings that are received in the form of performance bonuses.[33]

We do not know how effectively employers can use the variety of contracting strategies to recapture the benefits of the training they provide. The low turnover data cited above--in industries with above average OJT investments--does not suggest that employer mobility is a major problem.

Although people are mobile, the equipment on which they are trained may not be. A growing number of suppliers of equipment appear to offer extensive training to the employees of their customers. Therefore the cost of training may be shared between companies installing new equipment and companies supplying that equipment. Supplier companies profit by pointing out the advantages of complementary investments in equipment and training to potential customers.

Argument 4: Employers Need Incentives to Hire and Train the Disadvantaged

Lack of education or job skills is, perhaps, the single greatest handicap of the economically disadvantaged.[34] Public training programs have failed to remedy the problems of most of the hard-to-employ.[35] As a result, private firms have been offered direct subsidies and tax incentives to hire and

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[29] The theory of using junior employees as a "third party" to employer-employee contracts is derived by Lorne Carmichael, "Firm Specific Human Capital and Promotion Ladders," *Bell Journal of Economics*, Vol. 10, No. 2, pp. 251-258, Autumn 1983.

[30] Rosen defines a contract as: "a voluntary ex-ante agreement that resolves the distribution of uncertainty about the value and utilization of shared investments between contracting parties. The contract specifies precisely the amount of labor to be utilized and the wages to be paid in each state of nature, that is, conditional on information (random variables) observed by both parties." See Sherwin Rosen, "Implicit Contracts--A Survey," *Journal of Economic Literature*, Vol. XXIII, pp. 1144-1175, September 1985.

[31] Ibid, p. 1171.

[32] The cost of enforcing this contract may be high unless employers withhold salary for a few years.

[33] Masanori Hashimoto, "Bonus Payments, On-the-Job Training and Lifetime Employment," *Journal of Political Economy*, Vol. 87, pp. 1084-1104, October 1979.

[34] More than half the welfare population and three-quarters of the long-term poor have not graduated from high school--see Robert Friedman and Stephen Quick, *Safety Net as Ladder*, Washington, D.C., Council of State Policy and Planning Agencies, 1988.

[35] There are many analyses. See Sar A. Levitan and Frank Gallo, *A Second Chance: Training for Jobs*, Kalamazoo, MI, W.E. Upjohn, 1988 ("Short-sighted policies have led JTPA into a blind alley"); James Bovard, "The Failure of Federal Job Training," *Cato Institute Analysis*, Washington, D.C., 1986 ("Federal job training programs have harmed the careers of millions of Americans"); Nancy Dickinson, "Which Welfare-

train economically-disadvantaged people--doing what David Kearns, Chairman of Xerox, has called "Product-recall work for the public school system."[36] Many firms have created exemplary programs teaching employees to read and offering career ladders to disadvantaged people.

Proponents hoped that private firms would provide more relevant, job-related OJT for the disadvantaged. They also hoped that the promise of "real jobs, as rewards for successfully completing training would motivate participants more effectively than attending traditional classroom programs offered by the Comprehensive Employment and Training Act and its successor, the Job Training Partnership Act. In addition, subsidies could compensate for the fact that minimum wage laws discourage training for marginal workers by forcing employers to substitute higher wages for lower wages coupled with OJT."[37]

Overall, these hopes have not been realized. The workplace does not appear to be the best place to remedy a lack of basic skills. As a result, OJT for the disadvantaged has not increased wages very much and has increased hours worked only temporarily.[38] Even under CETA, people receiving formal classroom training in basic skills enjoyed more enduring increases in income than those receiving OJT."[39]

Wage Subsidies. Welfare grants have been employed for 15 years as wage subsidies.[40] In the 1970's, MDRC obtained a waiver from the U.S. Department of Health, Education and Welfare to divert welfare grants to employers for several months. The demonstration programs proved so cumbersome that MDRC William Grinker concluded: "The effort expended certainly does not appear to justify short-term results."[41] Following the 1984 Deficit Reduction Act, states were allowed to divert welfare grants without waiver, but did so without much greater success. The SWAP program in Florida was cancelled after 18 months because too few private employers could be found. A six-state WIN demonstration program, projected to place 8,000 in the first year, managed only 372 because few willing employers came forward.[42] There have been a few successful programs (see below), but their success depends on local initiative rather than on the size of the subsidy offered.

Although the goal of providing poor people with employment experience and OJT is laudable, direct and indirect subsidies do not seem to be an effective way to achieve it. Most participants lack basic skills--a deficiency underlined by their eligibility for the subsidy. OJT is no substitute for more effective K-12 education and for providing the poor with basic skills.

Work Strategies Work?" *Social Work*, Vol. 31, July-August 1986.

[36] David Kearns and Dennis Doyle, *Winning the Brain Race*, San Francisco, Institute for Contemporary Studies, 1988.

[37] Masanori Hashimoto, "Minimum Wage Effects on Training on the Job," *The American Economic Review*, Vol. 72, No. 5, pp. 1070-1087, December 1982.

[38] Robert Taggart, *A Fisherman's Guide*, Kalamazoo, MI, W.E. Upjohn Institute, 1981.

[39] Ibid.

[40] Under waivers from the U.S. Department of Health and Human Services under Section 1115 of the Social Security Act.

[41] In Harvey D. Shapiro, *Setting Up Shop: A Report on the Role of Revenue Generating Projects in the National Supported Work Demonstration*, New York, MDRC, 1983.

[42] Michael Bangser, James Healy, and Robert Ivy, *Welfare Grant Diversion: Lessons and Prospects*, New York, MDRC, March 1986.

Argument 5: Training Meets Social Objectives Beyond Those of Increasing Employee's Productivity.

> Labor is prior to, and independent of, capital. Capital is only the fruit of labor; and could never have existed if labor had not first existed. Labor is the superior of capital, and deserves much the higher consideration.
>
> Abraham Lincoln, 1861

Education serves social as well as economic objectives, those supporting public funding, if not the public provision, of education have argued.[43] The common experience of basic education has been felt to be vital to producing the "social or public benefits of education" that would have been difficult to capture in a private market.[44] Schools contribute to the equality of social, economic and political opportunities, and contribute to cultural and scientific progress.

But the same arguments cannot be made for employer-provided training. The outcomes expected from training are very different from those expected from K-12 education. Public education is universal and compulsory--a direct conflict with the basic right of parents to influence their children's development. The conflict, Henry Levin argues, was solved through a compromise: "Private differences were permitted in an overall system of common schools established within a broad institutional structure of formal education and compulsory attendance requirements."[45]

Employer-provided training is neither compulsory or universal. Subsidizing employer-provided training would increase rather than reduce the inequality of distribution of human capital. Employer-training serves, by one estimate, less than one worker in eight during a year.[46] All employers are not equally likely to offer training--large corporations invest more heavily than small and new businesses.[47] Men, whites, and better-educated employees are more likely to receive training the training than women and poorly-educated employees.[48] Employer-provided training is not an avenue through which broad social objectives can be addressed effectively or equitably.

Argument 6: Employers Could Provide Vocational Education Better than High Schools

European countries use apprenticeships extensively. High school students spend part time in school and part time in the workplace in formal training programs that may last several years. The classroom, it is felt, cannot teach certain work skills as well as the factory of office.

Success with this approach depend on creating "apprenticeship doorways" into many different occupations. Banks, food processing firms, hospitals and other employers would have to agree to create part time positions for apprentices, to create a structured environment for those apprentices, and not to create other entry points into the same career path. At the same time, schools have to surrender some of the responsibility and the money for training apprentices over the age of 15 or 16. Noyelle reports that, as the

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[43] Henry M. Levin, "Education as a Public and Private Good," *Journal of Public Policy and Management*, Vol. 6, No. 4, pp. 628-641.

[44] Ibid, p. 630.

[45] Ibid, p. 631.

[46] Carnevale, Op. Cit., p. 36.

[47] Ibid.

[48] Lillard and Tan, and Mangum, Op. Cit.

technical qualifications for jobs grow and as the flexibility demanded of the workforce increases, France is moving away from apprenticeships, and Germany is moving it back into the classroom."[29]

CONCLUSION

Employer-provided training is important for the overall growth of the economy and an important way in which many people acquire human capital. There is widespread support for encouraging employers to invest more heavily in training. But there is no evidence--either from a priori reasoning nor empirical evidence--that employers underinvest in training today nor why they would systematically underinvest. It is therefore difficult to judge how we could best offer further encouragement to employers since there are no obvious reasons why they should be discouraged. If the U.S. undersaves and underinvests overall, the problem should be tackled at the macro-level, not by subsidizing one type of asset. Employers can negotiate implicit and explicit contracts to capture the benefits of the training they pay for. Employer-provided training rarely compensates for poor education. And there are no compelling overall social reasons to subsidize training.

Nevertheless, many employers must try to fill vacancies with people lacking basic skills that should have been learned in school. Tight labor markets in many parts of the nations during 1988 offered people with high school diplomas choices of jobs and careers. They offered far fewer opportunities to less qualified people. Employers may not be the ideal trainers, but, in for many people, they may be the only available ones.

HOW COULD EMPLOYER-PROVIDED TRAINING BEST BE SUBSIDIZED?

We may give advice, but we can never prompt behavior.

La Rouchefoucauld

If national policy were directed at encouraging employers to invest more heavily in training and retraining, what techniques might prove the most effective? Many different approaches have been employed by federal, state, and local agencies and institutions. These will meet the overall goals of promoting development and expanding opportunity if they are: *targeted* to types of training or trainees that yield public as well as private benefits; *effective* in encouraging employers to train workers that they would not otherwise train; *neutral* in not inducing unprofitable new training while failing to induce profitable training;[30] and easy to administer.

Although evaluations that assess how different mechanisms perform against these criteria are rare, we can judge some of the strengths and weaknesses of four approaches:

Broad tax subsidies for hiring and training new workers.

Targeted subsidies for hiring and training economically/ developmentally disadvantaged workers.

Subsidies for "customized" training provided by public postsecondary institutions.

Making people more trainable.

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[29] Thierry Noyelle, *Skills, Skill Formation and Competitiveness*, Paper prepared for Institute on Education and the Economy, Teachers College, Columbia University, Conference on Employer Sponsored Training, Alexandria, VA, December 1-2, 1988.

[30] This definition of neutrality for incentives is analyzed by Arnold C. Harberger in "Tax Neutrality in Investment Incentives," in Henry J. Aaron and Michael J. Boskin, eds, *The Economics of Taxation*, Washington, D.C., The Brookings Institution, 1980.

Broad Tax Subsidies for Hiring and Training

Tax preferences are administratively the easiest subsidy to offer and may encourage employers to increase the level of investment in training. But the cost for each additional dollar of investment may be very high and incentives are difficult to target and usually favor short term investments.

Tax incentives do change business behavior. Analyses of the investment tax credit and the research and development tax credit have found strong impacts on the overall level of business investment and on research and development activity, respectively.[51]

The IRS has implicitly admitted that it cannot measure actual OJT expenditures and therefore finds it difficult to avoid subsidizing all employer expenditures for training. If all wages during the first six months on the job are eligible for a credit, employers can profit by firing people into order to rehire new people whose wages would be eligible. They can also profit from increasing the number of low-skilled high-turnover positions relative to the number of higher-skilled, lower turnover slots. It proved impossible to limit the New Jobs Tax Credit, enacted in 1977, to "net increases" in training, and so it was offered for any increase in payrolls. As a result, claims for the credit far exceeded prior estimates although few new jobs were created.[52] Employers collected over $4 billion in credits in just two years, frequently by "churning" their workforces.[53] The State of Michigan has recently introduced a tax incentive for training, allowing companies to write down part of their interest costs for loans taken out to finance employee training. Loans will not be eligible until 1989, so it is too soon to tell whether this incentive will prove practical.

Tax incentives are not neutral. Unless they are proportional to the length of life of the asset, they will distort invest decisions in favor of short-term investments relative to long-term investments.[54]

Tax incentives would harm the prospects of the disadvantaged. Individual Training Accounts (ITA) are a tax incentive that has received considerable attention recently.[55] ITAs are analogous to Individual Retirement Accounts (IRAs), would include matching contributions from both employer and employee which would be tax-exempt, and could be withdrawn without tax penalty to finance training or retraining if the employee lost his job or if job loss was threatened.

ITAs would be very expensive after a few years because the tax exemption would support much employer-provided training that would have occurred anyway. ITAs would also be inequitable because lower-income employees would be the least likely to have paid into an account. Any broad-based tax incentive for employee training, for example, would probably encourage employers to hire "trainable" people to replace the disadvantaged because the latter are not preferred trainees for most employers.

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[51] Henry J. Aaron and Joseph A. Pechman, eds., *How Taxes Affect Economic Behavior*, Washington, D.C., The Brookings Institution, 1981, and Eileen L. Collins, *An Early Assessment of the Three R and D Tax Incentives Provided by the Economic Recovery Tax Act*, Washington, D.C., National Science Foundation, 1983.

[52] Robert Tannenwald, "Are Wage and Training Subsidies Cost Effective?" *New England Economic Review*, September/October 1982, pp. 25-34.

[53] Emil Sunley, "A Tax Preference is Born: A Legislative History of the New Jobs Tax Credit," in Henry J. Aaron and Michael J. Boskin, *The Economics of Taxation*, Washington, D.C., The Brookings Institution, 1980.

[54] Harberger, Op. Cit.

[55] Dr. Pat Choate and June Linger, *The High-Flex Society*, New York, Knopf, 1986.

Targeted Hiring and Training Subsidies

Policymakers may wish to target training incentives to help the economically disadvantaged, to encourage growth industries or to support declining industries.

Targeting incentives may stigmatize the disadvantaged. The Targeted Jobs Tax Credit (which succeeded the New Jobs Tax Credit in 1979) provided employers with a tax credit for hiring economically-disadvantaged youth.[36] Initially, TJTC was used retroactively. Accountants determined which recent hires were eligible after they had been hired, and filed for the credit--indicating that the credit did not influence employers. As abuses were reduced, the willingness of employers to use the credit fell--only 27,000 credits were issued in 1985.[37] Overall, being eligible appears to stigmatize recipients. Reviewing a demonstration program in Dayton, Brookings fellow Gary Burtless concluded that "the amount of harm done by the voucher must have been considerable....[E]mployers appeared to interpret the voucher as implying 'damaged goods.'"[38]

The success of wage subsidy programs that have led to increased hiring and training of disadvantaged people does not depend on the subsidy. Successful efforts to place disadvantaged people in private jobs have relied on the initiative of local social service or job training agencies. Existing programs--especially since welfare reform enacted in 1988--already provide enterprising local social service agencies with effective subsidy mechanisms.

Among the hundreds of demonstration programs that have attempted to place disadvantaged people in jobs, those that work best are not those that offer the deepest subsidy, but those that provide employers and the disadvantaged with the greatest support during the hiring and training process--so that personal problems (from arriving at work on time to day-care) can be overcome.[39] Of the six WIN demonstration states (see above), the most successful was Arizona, which offered the lowest hourly subsidy, and the least successful was Florida, which offered the highest.[40]

New York's successful Training and Education Assistance Program placed more than three times as many General Assistance recipients as all six demonstration states combined in the middle of the 1981 recession, in part because local welfare responsibility to the tasks of caseworkers. Private placement organizations, under performance contracts, have also proved effective because they, not the employer, assume responsibility for dealing with any adjustment problems of the workers.[41]

Sectoral targeting cannot be separated from the political process. There are no strong economic grounds for focusing training subsidies on specific sectors. High-tech industries already engage in more training than other industries.[42] The curricula of Vo-Tech institutes already support their community's traditional economic base. Therefore decisions would tend to be political rather than economic.

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[36] For a history of the New Jobs Tax Credit, see Sunley, Op. Cit.

[37] Levitan and Gallo, Op. Cit., p. 73.

[38] Gary Burtless, "Are Targeted Wage Subsidies Harmful? Evidence from a Wage Voucher Experiment," *Industrial and Labor Relations Review*, Vol. 39, No. 1, October 1985.

[39] Jerome Patchen and Roger Vaughan, "Using Welfare Grants to Create Jobs," *Journal of Health and Human Resources Administration*, Vol. 6, No. 2, Fall 1983.

[40] Robert Friedman, *The Safety Net as Ladder*, Washington, D.C., Council of State Policy and Planning Agencies, 1988.

[41] For example, see the description of Transitional Employment Enterprises, Inc., in Friedman, Op. Cit.

[42] Lillard and Tan, Op. Cit.

An example of how political factors may dominate the targeting of training resources is given by the California's Employment Training Panel (ETP)--the most extensive state-financed training and retraining program. It is financed by a state surcharge on the Unemployment Insurance payroll tax yielding over $50 million annually.[43] The panel includes representatives from management and labor and enters into performance contracts with firms that have laid off or will have to lay off workers. The final payment is not made until 90 days after the completion of training. Because subsidies may be paid to any firm which trains either unemployed people or those whose jobs are threatened, contracts tend to be with larger firms and those firms with contacts on the panel. Nevertheless, ETP employs more extensive reporting and monitoring procedures than any other customized training program in the nation.

Subsidized Contracts with External Training Organizations

From the employer's viewpoint, the simplest approach may be to subsidize training in external organizations. The trainer--a local Vo-Tech, community college, or proprietary training institution--would be responsible for the paperwork, including determining which employees would be eligible and what types of training meet the requirements for the subsidy. Many employers already have close contacts with these schools. Many service delivery areas under JTPA contract through local private and public training programs for training specific to jobs with local employers. In 1957, North Carolina created and funded the first customized training Area Vocational Technical system. Forty-four states have followed this example.

But linking public postsecondary institutions with local employers is not always easy, although the wide variations in the governance of post-secondary voc-ed systems among states makes any generalizations dangerous. First, voc-ed institutions may not be able to retain the proceeds from tuition charges--in Louisiana, for example, they revert to the state.[44] With no financial rewards for designing successful customized training programs, the entrepreneurial ardor of directors will be dampened.

Second, most states have funded "customized" training programs as inducements to industry.[45] Only 14 of the 45 states with customized training programs control the program through the post-secondary education or vocational education agency--usually because these agencies are perceived as unresponsive to industries needs or slow to respond to requests.[46] In 20 states, the program is controlled by the economic development agency, in six by the labor department, in two by a new public corporation, and in three by multiple agencies. As a result, customized training may mean little more than a temporary wage subsidy for an incoming firm, and does nothing to encourage employers to engage in more training or to use local training institutions.[47] Neither does it encourage local institutions to find out what local employers need.

Third, state education bureaucracies may require time-consuming approval procedures before local institutions can contract with local employers--especially if any state funds, equipment, or facilities are to be

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[43] Arthur Young, *Study of the California Employment and Training Panel*, Los Angeles, CA, May 1985, and Office of the Legislative Analyst, "Review of the Employment and Training Panel Program," State of California, Sacramento, CA, April 1986.

[44] Gulf South Research Institute, *Post-Secondary Vocational Education in Louisiana*, Baton Rouge, LA, May 1987.

[45] Roger J. Vaughan, Robert Pollard, and Barbara Dyer, *Wealth of States*, Washington, D.C., Council of State Policy and Planning Agencies, 1986.

[46] David W. Steven, "State Industry-Specific Training Programs: Design and Assessment Issues," Department of Economics, University of Missouri, December 1987.

[47] Kentucky committed $33 million to "train" the workforce of an incoming Toyota plant--with few requirements defining eligible training, see David W. Stevens, "State Industry-Specific Training Programs," Department of Economics, University of Missouri, December 1986.

used. Fourth, budgets may offer institutions little flexibility in purchasing equipment, hiring staff, and making other expenditures in advance of payments from employers.

Removal of these barriers may create a more flexible system better able to serve both its students and its local employers. There are several successful examples of state programs that address these problems--although the absence of systematic evaluations make it difficult to assess how successfully:[68]

> The Bay State Skills Corporation in Massachusetts--imitated by both Florida and Kentucky--is a public corporation that finances cooperative training ventures between local post-secondary education institutions and companies.
>
> Iowa has passed legislation allowing community colleges to issue bonds to finance industry specific training.

The economically disadvantaged have benefitted little from customized training programs. After reviewing 45 state programs, economist David Stevens concluded: "States have been reluctant to use industry-specific training programs as vehicles for affirmative action on behalf of specific individuals or groups."[69]

Improving Basic Skills

Because employer-sponsored training is complementary with basic skills rather than a substitute for them, the best way to encourage employers to invest more in their employees may be to remedy the poor quality or absence of basic skills by improving the academic performance of at-risk students and by strengthening remedial education programs.

Measures to improve school performance focus on increasing accountability. Corporations are encouraging state and local governments to pay much closer attention to primary and secondary education issues by their growing financial involvement and leadership. Following the influential *Nation at Risk*, most states have made education their top policy priority, both as a means to promote economic development and as a means to deal with the problems of the economically disadvantaged. The governors' concern is reflected in the 1986 report of the National Governors' Association, *Time for Results*.[70] It is too early to know how well the ensuing wave of reforms will prove,[71] but approaches include:

> **Parental choice:** Minnesota has enacted a statewide program to allow parents to send their children to the public school of their choice--as a way of encouraging schools to compete for students by improving the quality of their programs. Arizona allows choice within school districts for high school students. Many states have funded magnet schools.
>
> **Measuring results:** The majority of states now prepare annual report cards on their schools that are used to inform parents and students about their local schools and sometimes in budgeting decisions.
>
> **Greater local discretion:** Dade County now provides schools with lump-sum rather than line-item budgets and allows actual expenditures to be determined by principals and teachers. Many states are following the contract offered by Governor Alexander of Tennessee when he proposed to school

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[68] Ibid.

[69] Ibid, p. 6.

[70] Report of the National Commission on Excellence in Education, *Nation at Risk*, Washington, D.C., 1983; and National Governors' Association, *Time for Results*, Washington, D.C., 1986.

[71] But see two publications by the U.S. Department of Education: *What Works*, 1986, and *Making it Work*, 1988.

districts: "We will agree to regulate you less if you agree to be held accountable for how well you perform."[72]

Better teachers: In exchange for higher teacher salaries, several states such as Texas and Mississippi are testing teachers' competence and setting aside funds for professional development.

Stronger curricula: Many states are developing stronger core curricula.

Financial incentives: Michigan offers financial bonuses for schools that show the greatest improvements in test scores among at-risk students.

Remedying skills deficiencies requires tighter targeting of public training funds: At present, the Work Incentive Program and programs sponsored by the Job Training Partnership Act are intended to reduce people's dependence on public income assistance by placing them in unsubsidized jobs.

Under JTPA, that involves relatively superficial assistance (placement rather than skills training) provided to the most qualified among the eligible population.[73] Although the program boasts higher placement rates than did its predecessor (CETA), many, perhaps most, of those placed would have found work without participating in the program.[74] JTPA targeting was tightened in mid-1987, but quarterly reports in mid-1988 showed little increase in the share of clients who were receiving public assistance or severely disadvantaged.

Several states are targeting training resources more tightly. Michigan and California both require welfare recipients lacking high school diplomas (or their equivalent) to enroll in remedial education programs or in employment programs. Those who fail to enroll risk losing their benefits. Both are trying to reduce the ratio of long-term to short-term welfare recipients in this way.

Focusing on the very hardest to employ requires careful testing of the competences--the weaknesses and the strengths--of those receiving public assistance.[75] Individual commitment to the program appears stronger when people choose their own programs and are accountable for how well they perform. For example, the much publicized Employment and Training Choices Program in Massachusetts--which is voluntary--tests participants who then work out programs that may include education, training, work experience, or placement.[76]

CONCLUSIONS

Most of the effective mechanisms to encourage employers to invest more in training their employees are already in place. The challenge is to make these programs operate more effectively rather than to create a blunt federal policy instrument out of the recently-reformed tax code. Overall, because of the strong complementarity between attainment of primary and secondary education, perhaps the best way to promote employer training is to increase share of students graduating from high schools and raise the basic skills of those graduates.

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[72] National Governors' Association, Op. Cit., p. 7.

[73] Levitan and Gallo, Op. Cit.

[74] Ibid, and Dickinson, Op. Cit.

[75] Friedman, Op. Cit.

[76] Ibid.